Poster #7 — Perchlorate Anion in Foods

Poster Title: **Rapid Determination of Perchlorate Anion in Foods by Ion Chromatography-Tandem Mass Spectrometry.**

Brief Abstract:

A rapid, sensitive, and specific method was developed for the determination of perchlorate anion in foods. The foods included fruits and vegetables, whole milk, grains, and bottled water. Individual procedures, for each, matrix, involved: extraction, graphitized carbon solid phase extraction (SPE) cleanup, followed by ion chromatography-tandem mass spectrometry (IC-MS/MS) determination. The IC column used was a 4.6 mm x 75 mm Waters IC-PakTM Anion HR column and the mobile phase consisted of 100 mM ammonium acetate in 50:50 (v/v) acetonitrile:water. A triple stage quadrupole mass spectrometer, equipped with electrospray ionization (ESI) in the negative ion mode, was used to determine perchlorate anion. An 18O4-labeled perchlorate internal standard was used to correct for any matrix effects. The limit of quantitation (LOQ) was 1.0 µg/kg in fruits and vegetables, 0.50 µg/L in bottled water, 3.0 µg/L in milk, and 3.0 µg/kg in dry products. Recoveries in fortified test portions were acceptable ranging from 80 -120%.

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